

What is claimed is:

1. An electric rotary machine equipped with a stator coil including sequentially-connected conductor segments, comprising:

5 a rotor having P pairs of magnetic poles;

a stator core with a plurality of slots, each slot having a plurality of conductor accommodation positions sequentially aligned in a radial direction;

M-phase windings, where M is an odd number not less than 3, each phase winding being constituted by sequentially connecting a plurality of U-shaped conductor segments;

10 said conductor segment comprising a pair of in-slot conductor portions separately accommodated into two different slots mutually spaced by a predetermined slot pitch, a U-shaped head portion continuously extending from said in-slot conductor portions and protruding from one end of said stator core so as to constitute a head side coil end, and a pair of tail conductor portions continuously extending from said in-slot conductor portions and protruding from the other end of said stator so as to constitute a tail side coil end; and

said pair of tail conductor portions having distal ends being bonded to distal ends of tail conductor portions of other conductor segment,

20 wherein K inphase slots arranged successively in a circumferential direction cooperatively constitute an inphase slot group, each inphase slot accommodating the in-slot conductor portions constituting the same phase winding, where K is a natural number not smaller than 2,

said slot comprises S conductor accommodation position sets, each conductor accommodation position set including 1st-layer to 4th-layer conductor accommodation positions being numbered from a radially inner side and sequentially aligned in a radial direction, and

30 said phase winding comprises C ($=S/T$) parallel coils connected in parallel to each other, each parallel coil including T (T is a natural number including 1) layer coils connected in series and selected from S layer coils accommodated in respective conductor accommodation position sets, said S

layer coils being accommodated in respective conductor accommodation position sets and constituted by serially connecting K partial coils accommodated in said inphase slots arranged successively in the circumferential direction and accommodated in the same conductor accommodation position set.

2. The electric rotary machine equipped with a stator coil including sequentially-connected conductor segments in accordance with claim 1, wherein

said partial coil comprises first and second circulation coils and a modified wave winding conductor segment,

said first and second circulation coils are constituted by alternately connecting a wave winding conductor segment inserted into 1st-layer and 4th-layer conductor accommodation positions and a lap winding conductor segment inserted into 2nd-layer and 3rd-layer conductor accommodation positions, and

said modified wave winding conductor segment connects said first and second circulation coils and constitutes a trailing in-slot conductor portion of said first circulation coil and a leading in-slot conductor portion of said second circulation coil,

said layer coil is constituted by K partial coils accommodated respectively in K inphase slots arranged consecutively in the circumferential direction and serially connected by circumferential joint conductor segments, and

said circumferential joint conductor segment constitutes a leading in-slot conductor portion of one of serially connected partial coils and a trailing in-slot conductor portion of the other of serially connected partial coils.

3. The electric rotary machine equipped with a stator coil including sequentially-connected conductor segments in accordance with claim 1, wherein S is equal to C.

4. The electric rotary machine equipped with a stator coil including sequentially-connected conductor segments in accordance with claim 3, further

comprising a radial joint conductor segment having a pair of in-slot conductor portions separately accommodated in two adjacent sets of said conductor accommodation position sets and accommodated in the inphase slot having the same order in the circumferential direction, and said radial joint conductor
5 segment being connected to a leader line of said parallel coil,

wherein the pair of in-slot conductor portions of said radial joint conductor segment constitutes a leading or trailing in-slot conductor portion of two layer coils disposed adjacently in the radial direction.